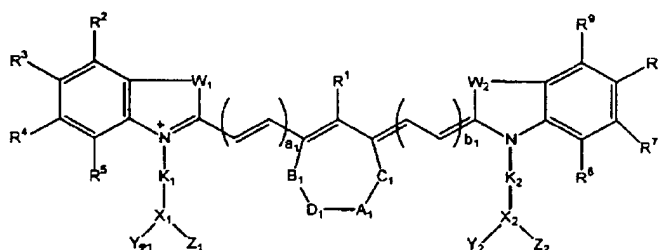


### Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

1-7. (CANCELED)

8. (CURRENTLY AMENDED) A method for performing a tandem diagnostic and therapeutic procedure comprising administering to an individual an effective amount of the composition of cyanine dye bioconjugate of Formula 3



wherein  $W_1$  and  $W_2$  may be the same or different and are selected from the group consisting of  $-CR^{10}R^{11}$ ,  $-O-$ ,  $-NR^{12}$ ,  $-S-$ , and  $-Se$ ;  $Y_1$ ,  $Y_2$ ,  $Z_1$ , and  $Z_2$  are independently selected from the group consisting of hydrogen, tumor-specific agent, phototherapy agent,  $-CONH-Bm$ ,  $-NHCO-Bm$ ,  $-(CH_2)_a-CONH-Bm$ ,  $-CH_2-(CH_2OCH_2)_b-CH_2-CONH-Bm$ ,  $-(CH_2)_a-NHCO-Bm$ ,  $-CH_2-(CH_2OCH_2)_b-CH_2-NHCO-Bm$ ,  $-(CH_2)_a-N(R^{12})-(CH_2)_b-CONH-Bm$ ,  $-(CH_2)_a-N(R^{12})-(CH_2)_c-NHCO-Bm$ ,  $-(CH_2)_a-N(R^{12})-CH_2-(CH_2OCH_2)_b-CH_2-CONH-Bm$ ,  $-(CH_2)_a-N(R^{12})-CH_2-(CH_2OCH_2)_b-CH_2-NHCO-Bm$ ,  $-CH_2-(CH_2OCH_2)_b-CH_2-N(R^{12})-(CH_2)_a-CONH-Bm$ ,  $-CH_2-(CH_2OCH_2)_b-CH_2-N(R^{12})-(CH_2)_a-NHCO-Bm$ ,  $-CH_2$

$-(\text{CH}_2\text{OCH}_2)_b\text{-CH}_2\text{-N(R}^{12})\text{-CH}_2\text{-(CH}_2\text{OCH}_2)_d\text{-CONH-Bm}$ ,  $-\text{CH}_2\text{-(CH}_2\text{OCH}_2)_b\text{-CH}_2\text{-N(R}^{12})$   
 $-\text{CH}_2\text{-(CH}_2\text{OCH}_2)_d\text{-NHCO-Bm}$ ,  $-\text{CONH-Dm}$ ,  $-\text{NHCO-Dm}$ ,  $-(\text{CH}_2)_a\text{-CONH-Dm}$ ,  $-\text{CH}_2$   
 $-(\text{CH}_2\text{OCH}_2)_b\text{-CH}_2\text{-CONH-Dm}$ ,  $-(\text{CH}_2)_a\text{-NHCO-Dm}$ ,  $-\text{CH}_2\text{-(CH}_2\text{OCH}_2)_b\text{-CH}_2\text{-NHCO-Dm}$ ,  
 $-(\text{CH}_2)_a\text{-N(R}^{12})\text{-(CH}_2)_b\text{-CONH-Dm}$ ,  $-(\text{CH}_2)_a\text{-N(R}^{12})\text{-(CH}_2)_c\text{-NHCO-Dm}$ ,  $-(\text{CH}_2)_a\text{-N(R}^{12})$   
 $-\text{CH}_2\text{-(CH}_2\text{OCH}_2)_b\text{-CH}_2\text{-CONH-Dm}$ ,  $-(\text{CH}_2)_a\text{-N(R}^{12})\text{-CH}_2\text{-(CH}_2\text{OCH}_2)_b\text{-CH}_2\text{-NHCO-Dm}$ ,  
 $-\text{CH}_2\text{-(CH}_2\text{OCH}_2)_b\text{-CH}_2\text{-N(R}^{12})\text{-(CH}_2)_a\text{-CONH-Dm}$ ,  $-\text{CH}_2\text{-(CH}_2\text{OCH}_2)_b\text{-CH}_2\text{-N(R}^{12})$   
 $-(\text{CH}_2)_a\text{-NHCO-Dm}$ ,  $-\text{CH}_2\text{-(CH}_2\text{OCH}_2)_b\text{-CH}_2\text{-N(R}^{12})\text{-CH}_2\text{-(CH}_2\text{OCH}_2)_d\text{-CONH-Dm}$ ,  $-\text{CH}_2\text{-}$   
 $(\text{CH}_2\text{OCH}_2)_b\text{-CH}_2\text{-N(R}^{12})\text{-CH}_2\text{-(CH}_2\text{OCH}_2)_d\text{-NHCO-Dm}$ ,  $-(\text{CH}_2)_a\text{-N R}^{12}\text{R}^{13}$ , and  
 $-\text{CH}_2(\text{CH}_2\text{OCH}_2)_b\text{-CH}_2\text{N R}^{12}\text{R}^{13}$ ;  $\text{K}_1$  and  $\text{K}_2$  are independently selected from the group  
 consisting of  $\text{C}_1\text{-C}_{30}$  alkyl,  $\text{C}_5\text{-C}_{30}$  aryl,  $\text{C}_1\text{-C}_{30}$  alkoxy,  $\text{C}_1\text{-C}_{30}$  polyalkoxyalkyl,  $\text{C}_1\text{-C}_{30}$   
 polyhydroxyalkyl,  $\text{C}_5\text{-C}_{30}$  polyhydroxyaryl,  $\text{C}_1\text{-C}_{30}$  aminoalkyl, saccharide, peptide,  
 $-\text{CH}_2(\text{CH}_2\text{OCH}_2)_b\text{-CH}_2\text{-}$ ,  $-(\text{CH}_2)_a\text{-CO-}$ ,  $-(\text{CH}_2)_a\text{-CONH-}$ ,  $-\text{CH}_2\text{-(CH}_2\text{OCH}_2)_b\text{-CH}_2\text{-CONH-}$ ,  
 $-(\text{CH}_2)_a\text{-NHCO-}$ ,  $-\text{CH}_2\text{-(CH}_2\text{OCH}_2)_b\text{-CH}_2\text{-NHCO-}$ ,  $-(\text{CH}_2)_a\text{-O-}$ , and  $-\text{CH}_2\text{-(CH}_2\text{OCH}_2)_b$   
 $-\text{CO-}$ ;  $\text{X}_1$  and  $\text{X}_2$  are single bonds, or are independently selected from the group  
 consisting of nitrogen, saccharide,  $-\text{CR}^{14}\text{-}$ ,  $-\text{CR}^{14}\text{R}^{15}$ ,  $-\text{NR}^{16}\text{R}^{17}$ ;  $\text{C}_5\text{-C}_{30}$  aryl;  $\text{Q}$  is a  
 single bond or is selected from the group consisting of  $-\text{O-}$ ,  $-\text{S-}$ ,  $-\text{Se-}$ , and  $-\text{NR}^{18}$ ;  $\text{A}_1$  is a  
 single or a double bond;  $\text{B}_1$ ,  $\text{C}_1$ , and  $\text{D}_1$  are independently selected from the group  
 consisting of  $-\text{O-}$ ,  $-\text{S-}$ ,  $-\text{Se-}$ ,  $-\text{P-}$ ,  $-\text{CR}^{10}\text{R}^{11}$ ,  $-\text{CR}^{11}$ , alkyl,  $-\text{NR}^{12}$ , and  $-\text{C=O}$ ;  $\text{A}_1$ ,  $\text{B}_1$ ,  $\text{C}_1$ , and  
 $\text{D}_1$  may together form a 6- to 12-membered carbocyclic ring or a 6- to 12-membered  
 heterocyclic ring optionally containing one or more oxygen, nitrogen, or sulfur atom;  $a_1$   
 and  $b_1$  independently vary from 0 to 5;  $\text{R}^1$  to  $\text{R}^{13}$ , and  $\text{R}^{18}$  are independently selected  
 from the group consisting of hydrogen,  $\text{C}_1\text{-C}_{10}$  alkyl,  $\text{C}_5\text{-C}_{20}$  aryl,  $\text{C}_1\text{-C}_{10}$  alkoxy,  $\text{C}_1\text{-C}_{10}$

polyalkoxyalkyl, C<sub>1</sub>-C<sub>20</sub> polyhydroxyalkyl, C<sub>5</sub>-C<sub>20</sub> polyhydroxyaryl, C<sub>1</sub>-C<sub>10</sub> aminoalkyl, cyano, nitro, halogen, saccharide, peptide, -CH<sub>2</sub>(CH<sub>2</sub>OCH<sub>2</sub>)<sub>b</sub>-CH<sub>2</sub>-OH, -(CH<sub>2</sub>)<sub>a</sub>-CO<sub>2</sub>H, -(CH<sub>2</sub>)<sub>a</sub>-CONH-Bm, -CH<sub>2</sub>-(CH<sub>2</sub>OCH<sub>2</sub>)<sub>b</sub>-CH<sub>2</sub>-CONH-Bm, -(CH<sub>2</sub>)<sub>a</sub>-NHCO-Bm, -CH<sub>2</sub>-(CH<sub>2</sub>OCH<sub>2</sub>)<sub>b</sub>-CH<sub>2</sub>-NHCO-Bm, -(CH<sub>2</sub>)<sub>a</sub>-OH and -CH<sub>2</sub>-(CH<sub>2</sub>OCH<sub>2</sub>)<sub>b</sub>-CO<sub>2</sub>H; R<sup>14</sup> to R<sup>17</sup> are independently selected from the group consisting of hydrogen, C<sub>1</sub>-C<sub>10</sub> alkyl, C<sub>5</sub>-C<sub>20</sub> aryl, C<sub>1</sub>-C<sub>10</sub> alkoxyl, C<sub>1</sub>-C<sub>10</sub> polyalkoxyalkyl, C<sub>1</sub>-C<sub>20</sub> polyhydroxyalkyl, C<sub>5</sub>-C<sub>20</sub> polyhydroxyaryl, C<sub>1</sub>-C<sub>10</sub> aminoalkyl, saccharide, peptide, -CH<sub>2</sub>(CH<sub>2</sub>OCH<sub>2</sub>)<sub>b</sub>-CH<sub>2</sub>-, -(CH<sub>2</sub>)<sub>a</sub>-CO-, -(CH<sub>2</sub>)<sub>a</sub>-CONH-, -CH<sub>2</sub>-(CH<sub>2</sub>OCH<sub>2</sub>)<sub>b</sub>-CH<sub>2</sub>-CONH-, -(CH<sub>2</sub>)<sub>a</sub>-NHCO-, -CH<sub>2</sub>-(CH<sub>2</sub>OCH<sub>2</sub>)<sub>b</sub>-CH<sub>2</sub>-NHCO-, -(CH<sub>2</sub>)<sub>a</sub>-O-, and -CH<sub>2</sub>-(CH<sub>2</sub>OCH<sub>2</sub>)<sub>b</sub>-CO-; Bm and Dm are independently selected from the group consisting of bioactive peptide, protein, cell, antibody, antibody fragment, saccharide, glycopeptide, peptidomimetic, drug, drug mimic, hormone, metal chelating agent, radioactive or nonradioactive metal complex, echogenic agent, photoactive molecule, and phototherapy agent; a and c independently vary from 1 to 20; b and d independently vary from 1 to 100; and

thereafter performing said tandem diagnostic and therapeutic procedure.

9. (ORIGINAL) The method for performing the diagnostic and therapeutic procedure of claim 8 which comprises administering to an individual an effective amount of the composition of cyanine dye bioconjugate wherein W<sub>1</sub> and W<sub>2</sub> are independently selected from the group consisting of -C(CH<sub>3</sub>)<sub>2</sub>, -C((CH<sub>2</sub>)<sub>a</sub>OH)CH<sub>3</sub>, -C((CH<sub>2</sub>)<sub>a</sub>OH)<sub>2</sub>, -C((CH<sub>2</sub>)<sub>a</sub>CO<sub>2</sub>H)CH<sub>3</sub>, -C((CH<sub>2</sub>)<sub>a</sub>CO<sub>2</sub>H)<sub>2</sub>, -C((CH<sub>2</sub>)<sub>a</sub>NH<sub>2</sub>)CH<sub>3</sub>, -C((CH<sub>2</sub>)<sub>a</sub>NH<sub>2</sub>)<sub>2</sub>,

$-\text{C}((\text{CH}_2)_a\text{NR}^{12}\text{R}^{13})_2$ ,  $-\text{NR}^{12}$ , and  $-\text{S}$ ;  $\text{Y}_1$  and  $\text{Y}_2$  are selected from the group consisting of hydrogen, tumor-specific agent,  $-\text{CONH-Bm}$ ,  $-\text{NHCO-Bm}$ ,  $-(\text{CH}_2)_a\text{-CONH-Bm}$ ,  $-\text{CH}_2\text{-(CH}_2\text{OCH}_2)_b\text{-CH}_2\text{-CONH-Bm}$ ,  $-(\text{CH}_2)_a\text{-NHCO-Bm}$ ,  $-\text{CH}_2\text{-(CH}_2\text{OCH}_2)_b\text{-CH}_2\text{-NHCO-Bm}$ ,  $-(\text{CH}_2)_a\text{-NR}^{12}\text{R}^{13}$ , and  $-\text{CH}_2\text{-(CH}_2\text{OCH}_2)_b\text{-CH}_2\text{NR}^{12}\text{R}^{13}$ ;  $\text{Z}_1$  and  $\text{Z}_2$  are independently selected from the group consisting of hydrogen, phototherapy agent,  $-\text{CONH-Dm}$ ,  $-\text{NHCO-Dm}$ ,  $-(\text{CH}_2)_a\text{-CONH-Dm}$ ,  $-\text{CH}_2\text{-(CH}_2\text{OCH}_2)_b\text{-CH}_2\text{-CONH-Dm}$ ,  $-(\text{CH}_2)_a\text{-NHCO-Dm}$ ,  $-\text{CH}_2\text{-(CH}_2\text{OCH}_2)_b\text{-CH}_2\text{-NHCO-Dm}$ ,  $-(\text{CH}_2)_a\text{-NR}^{12}\text{R}^{13}$ , and  $-\text{CH}_2\text{-(CH}_2\text{OCH}_2)_b\text{-CH}_2\text{NR}^{12}\text{R}^{13}$ ;  $\text{K}_1$  and  $\text{K}_2$  are independently selected from the group consisting of  $\text{C}_1\text{-C}_{10}$  alkyl,  $\text{C}_5\text{-C}_{20}$  aryl,  $\text{C}_1\text{-C}_{20}$  alkoxy,  $\text{C}_1\text{-C}_{20}$  aminoalkyl,  $-(\text{CH}_2)_a\text{-CO-}$ ,  $-(\text{CH}_2)_a\text{-CONH-}$ ,  $-\text{CH}_2\text{-(CH}_2\text{OCH}_2)_b\text{-CH}_2\text{-CONH-}$ ,  $-(\text{CH}_2)_a\text{-NHCO-}$ ,  $-\text{CH}_2\text{-(CH}_2\text{OCH}_2)_b\text{-CH}_2\text{-NHCO-}$ , and  $-\text{CH}_2\text{-(CH}_2\text{OCH}_2)_b\text{-CO-}$ ;  $\text{X}_1$  and  $\text{X}_2$  are single bonds, or are independently selected from the group consisting of nitrogen,  $-\text{CR}^{14}$ ,  $-\text{CR}^{14}\text{R}^{15}$ , and  $-\text{NR}^{16}\text{R}^{17}$ ;  $\text{A}_1$  is a single or a double bond;  $\text{B}_1$ ,  $\text{C}_1$ , and  $\text{D}_1$  are independently selected from the group consisting of  $-\text{O-}$ ,  $-\text{S}$ ,  $-\text{CR}^{11}$ , alkyl,  $-\text{NR}^{12}$ , and  $-\text{C=O}$ ;  $\text{A}_1$ ,  $\text{B}_1$ ,  $\text{C}_1$ , and  $\text{D}_1$  may together form a 6- to 12-membered carbocyclic ring or a 6- to 12-membered heterocyclic ring optionally containing one or more oxygen, nitrogen, or sulfur atom;  $a_1$  and  $b_1$  independently vary from 0 to 3;  $\text{Bm}$  is selected from the group consisting of bioactive peptide containing 2 to 30 amino acid units, protein, antibody fragment, mono- and oligosaccharide; bioactive peptide, protein, and oligosaccharide;  $\text{Dm}$  is selected from the group consisting of photosensitizer, photoactive molecule, and phototherapy agent;  $a$  and  $c$  independently vary from 1 to 20;  $b$  and  $d$  independently vary from 1 to 100.

10. (ORIGINAL) The method for performing the diagnostic and therapeutic procedure of claim 9 comprising administering to an individual an effective amount of the composition of cyanine dye bioconjugate wherein each  $W^1$  and  $W^2$  is  $-C(CH_3)_2$ ; each  $K_1$  and  $K_2$  is  $-(CH_2)_4CO-$ ; each  $X_1$  and  $X_2$  is a single bond;  $A_1$  is a single bond; each  $B_1$ ,  $C_1$ , and  $D_1$  is  $-CH_2-$ ;  $R^1$  is Cl; each  $R^2$  to  $R^9$ ,  $Y_1$  and  $Z_1$  is H;  $Y_2$  is a tumor-specific agent; and  $Z_2$  is a phototherapy agent.

11. (ORIGINAL) The method for performing the diagnostic and therapeutic procedure of claim 10 comprising administering to an individual an effective amount of the composition of cyanine dye bioconjugate wherein the said tumor-specific agent is a bioactive peptide containing 2 to 30 amino acid units.

12. (ORIGINAL) The method for performing the diagnostic and therapeutic procedure of claim 11 comprising administering to an individual an effective amount of the composition of cyanine dye bioconjugate wherein the said tumor-specific agent is octreotate and bombesin (7-14).

13. (ORIGINAL) The method for performing the diagnostic and therapeutic procedure of claim 10 comprising administering to an individual an effective amount of the composition of cyanine dye bioconjugate wherein the said phototherapy agent is a photosensitizer.